



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/810,051  | 03/26/2004  | Subhash P. Vernekar  | 03108/0201081-US0   | 7900             |
| 7278  | 7590        | 12/30/2005           | EXAMINER            |                  |
| DARBY & DARBY P.C.<br>P. O. BOX 5257<br>NEW YORK, NY 10150-5257 |             |                      | LEE, RIP A          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1713                |                  |
| DATE MAILED: 12/30/2005   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/810,051

Applicant(s)

VERNEKAR ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-20-2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 1 is objected to because of the following informalities: The meaning of the phrase, “minimum temperature of the melting point” is not understood. Appropriate correction is required.
2. Claim 10 is objected to because of the following informalities: Please see MPEP 2173.05(d) regarding use of the exemplary term, “preferably.” Appropriate correction is required.
3. Claim 7 is objected to because of the following informalities: Sulfonic acids are not carboxylic acids, and therefore, claim 7 fails to further limit the subject matter of claim 6. Appropriate correction is required.
4. Claims 21 and 22 are objected to because of the following informalities: The type of molecular weight (*i.e.*, number average molecular weight, weight average molecular weight, *etc.*) of the polymer should be indicated. Appropriate correction is required.
5. Claim 24 is objected to because of the following informalities: In line 3 of the claim, it is not clear what is to be exposed to air. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 9, 10, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is drawn to a host of solvents suitable for dissolution of nucleating agent. The specification teaches use of metallic salts of carboxylic acids as the nucleating agent. It is not clear from the specification that hydrocarbons of 5-15 carbon atoms, mixtures of hydrocarbons, aromatic hydrocarbons, petrol, kerosene, and ketones having three to seven carbon atoms are suitable for dissolution of metal carboxylates. In fact, aromatic hydrocarbons such as toluene, and ketones such as acetone and MIBK are shown clearly to be *non-solvents* in the gel forming process (see examples). As such, the role of such non-solvents in dissolving nucleating agents is not understood, and accordingly, subject matter of the claims remains unclear.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4-9, 11-19, and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Marinaccio *et al.* (U.S. 3,637,634/GB 1,202,835).

The patent teaches dissolution of sodium benzoate in water/alcohol to form a gel-like slurry, and admixing the resulting mixture with polypropylene powder, and removing the solvent (col. 3, lines 11-18, examples 1 and 2). One learns that said gel-like slurry is actually a gel (col. 3, line 73 – col. 4, line 7). The alcohol used in the example is isopropanol, but methanol is another recited, preferred nonsolvent (col. 3, line 47). After mixing mechanically, the polymer/nucleating mixture is dried at elevated temperatures of 30-60 °C (col. 4, line 54). A step of injection molding of polypropylene/nucleating agent is disclosed in example 3. In the overall composition, the target amount of nucleating agent in the resin lies in the range of 0.05-2.0 wt % (col. 4, line 10). According to the inventors, further additives may be included in the gel composition (col. 4, line 37).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marinaccio *et al.* in view of Lindahl *et al.* (U.S. 6,809,154).

Marinaccio *et al.* indicates that the nucleating gels of the invention are suitable for a variety of olefin polymers such as propylene, copolymers of propylene and other olefins, polyethylene, and polybutene, but the reference is silent regarding the exact constitution of these contemplated embodiments. Lindahl *et al.* teaches compositions in which HDPE (0.1-10 wt % comonomer) having a weight average molecular weight of 50,000-500,000 are nucleated with sodium benzoate (claims 3, 13, and 19). Given that the process of Marinaccio *et al.* allows for better dispersion of sodium benzoate in polyolefin resins in order to overcome problems associated with limited solubility, one having ordinary skill in the art would have found it obvious to use the gels of Marinaccio *et al.* as the nucleation agent in the compositions of Lindahl *et al.* in order to obviate these problems. The combination is obvious because the process of Marinaccio *et al.* is a general one, and since it has been shown to work for polypropylenes, one of ordinary skill in the art would have expected such a combination to work for HDPE resins equally well.

Art Unit: 1713

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marinaccio *et al.* in view of Thompson *et al.* (U.S. 4,178,421).

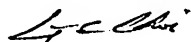
The reference does not teach heating the dissolved solution to the boiling point of the solvent and allowing the solution to cool, as indicated in the claims. Thompson *et al.* teaches that the concentration of sodium benzoate solution depends on its temperature, *i.e.*, the warmer the solution, the more sodium benzoate can be dissolved up to the point of saturation (col. 3, lines 50-57). In light of this teaching, it is deemed that it would have been obvious to one of ordinary skill in the art would have found it obvious to heat the solvent to improve solubility of nucleating agent in the solvent, since it has been deemed that the discovery of optimum values of result-effective variables in a known process is within the level of ordinary skill in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

ral

December 1, 2005

  
LING-SUI CHOI  
PRIMARY EXAMINER